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INERTIA AND PRACTICAL DIFFICULTIES HAVE PREVENTED A VARIETY OF INDIVIDUALIZED EDUCATION PROGRAMS FROM ACHIEVING THEIR GOAL OF PROVIDING AN OPPORTUNITY FOR INDIVIDUALS AT EVERY LEVEL OF ABILITY TO REALIZE THEIR POTENTIALS AND TO PERFORM AT THEIR BEST. EFFECTIVE INDIVIDUALIZED EDUCATION SHOULD PROVIDE A SYSTEM OF INDIVIDUALIZED INSTRUCTION WHICH NURTURES INDEPENDENT LEARNING AND A LEARNING ENVIRONMENT ADAPTED TO THE NEEDS OF EACH STUDENT. PATTERNS OF INDIVIDUALIZED INSTRUCTION HAVE VARIED FROM THE RELATIVELY INFLEXIBLE PROGRAM WHERE STUDENTS ARE DROPPED AS THEY REACH THEIR PRESUMED LEVELS OF ACHIEVEMENT, TO TRACK PLANS AND INDIVIDUALLY TAILORED INSTRUCTIONAL TREATMENTS. RECOMMENDATIONS INCLUDE--(1) REDESIGNED GRADE LEVEL BOUNDARIES AND TIME LIMITS FOR SUBJECT MATTER COVERAGE, (2) WELL-DEFINED SEQUENCES OF BEHAVIORALLY DEFINED OBJECTIVES AS STUDY GUIDES FOR INDIVIDUAL STUDENTS, (3) ADEQUATE EVALUATION OF A STUDENT'S PROGRESS THROUGH A CURRICULUM SEQUENCE, (4) INSTRUCTIONAL MATERIALS APPROPRIATE FOR SELF-DIRECTED LEARNING, (5) PROFESSIONAL TRAINING OF SCHOOL PERSONNEL IN STUDENT EVALUATION AND GUIDANCE, AND (6) USE BY TEACHERS OF STUDENT PROFILES, AUTOMATION, AND OTHER SPECIAL TECHNIQUES TO DESIGN INDIVIDUALIZED INSTRUCTIONAL PROGRAMS. (JK)

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RE EDUCATION OF INDIVIDUALS

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**U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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THE EDUCATION OF INDIVIDUALS

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The Education of Individuals

Robert Glaser

Our society is committed to the significance of individual performance, and if we are people of principle, we must act accordingly. To act accordingly requires us to permit the exercise of individual talents and to offer the opportunity to develop and excel in these respects. The problem, so well stated by John W. Gardner,¹ is to provide opportunities and rewards for individuals at every level of ability to realize their potentials and to perform at their best, while at the same time adjusting to society's institutional defenses against excessive emphasis on individual performance. If we accept Gardner's statement of the contesting forces of the rewards for individual performance versus the restraints on individual performance as balancing influences in society, then an educational system which does not allow adequate exercise of individual talents sends out individuals more susceptible to the forces of restraint on their performance than is required for a viable, progressing civilization. It is necessary for an educational system to arrange for the individualized treatment of students; at the same time, invidious distinctions between students, based upon irrelevant stratification, must be minimized.

Educators are aware of this necessity. Their concern with adapting to the needs of the student is a familiar theme which has been repeated over and over again and which provides the justification and basic premise for many current educational innovations and experiments. Advances have been instituted for accomplishing this fundamental goal--"track" plans, "continuous progress" plans, team teaching, etc. For the most part, these systems seem never to gather the force to cast off the effects of past practice and organizational inertia. At their best, they remain unique and lauded examples which resist proper dissemination and die, or they become diluted when mixed in the overpowering solution of day-to-day exigencies of school system operation and of pressures on colleges of education to turn out teachers who meet present needs and not new or tomorrow's requirements.

¹John W. Gardner, Excellence: Can We Be Equal and Excellent Too? Harper & Brothers, Publishers, New York, 1961.

The need is documented and the ideal has been expressed. What do we need to understand about the background, history, pedagogical requirements, psychological facts, technical instructional requirements, and organizational and administrative structures in order to build successful systems for the education of individuals? What underlies our failures in the past and what presently available facts and thinking make our success highly probable at the present time?

Goals of Individualization

It is useful to examine why individualized forms of instruction appear to be goals worth developing. Other than the platitude of "catering to the needs of the student," what explicitly can we look to as educational outcomes worth attaining? First, a system of individualized instruction nurtures independent learning and, as a result, has the potential for producing individuals who are self-resourceful and self-appraising learners. Resourceful individuals of this kind cannot be produced in any significant numbers by our traditional educational environment in which the primary burden of initiating and maintaining learning is the job of the teacher rather than the job of the learner. At the very least, this should be a shared endeavor.

Second, instruction which adapts to individual requirements seems impossible to envision without inclusion of the notions of competence, mastery, and the attainment of standards. Unfettered by the practical necessity for group pacing and for adjustments to a teaching strategy adapted to the group average, it appears necessary for each individual to work to attain a standard of performance which permits him to move on in competence and knowledge. The possibilities of any one individual attaining competence is enhanced since the environment in which he can progress is adapted to his requirements and purposes, undiluted by the frustration of moving ahead with the bright students or the discouragement of just keeping up with the less bright students. In this way, a realistic sense of achievement is developed which encourages the use of one's abilities. The admission to be made is that more than lip service must be paid to the undeniable fact that individuals do differ extensively in their abilities, and our educational system is under obligation to develop an operational capability in line with the facts of human behavior.

Obstacles to Individualization

In the development of educational structures that adapt to the individual learner, there have been two primary obstacles: (1) school management structures and their associated teaching practices have been difficult to change under the pressure of practical necessities; and (2) the learning theories upon which educational practices need to be based have been very much devoted to their own growing pains. This growing period has been concerned with carefully controlled experimental studies which lead to the discovery of general and simple laws of behavior--general and simple because, for the most part, the nuances of individual differences in studies of learning have been held constant in order to understand the fundamental processes involved. However, at the present time, the science of psychology is devoting increasing attention to the interaction between individual differences and complex learning phenomena.

Patterns of Adaptation to Individual Differences

In education, several major patterns of adapting to individual differences can be identified if one examines past and present educational practices and examines future possibilities². These patterns can be described in terms of the extent to which educational goals and instructional methods have been varied for the handling of individual differences as they appear in the school. One pattern occurs where both educational goals and instructional methods are relatively fixed and inflexible. Individual differences are taken into account chiefly by dropping students along the way. The underlying rationale involved is that every child should "go as far as his abilities warrant." However, a weeding-out process is assumed which is reached earlier or later by different individuals. With this pattern, it is also possible to vary "time to learn" as required for different students. When this is carried out, an individual is permitted to stay in school until he learns certain essential educational

²See Lee J. Cronbach, "How Can Instruction Be Adapted to Individual Differences?" in Robert Gagné (Ed.), Learning and Individual Differences, Merrill Books, 1966.

outcomes to a specified criterion of achievement. To some extent, this latter practice is carried out in the old policy of keeping a child in the first grade until he can read his primer and in the more recent nongraded primary unit which some children complete in three years, and some in four.

A second pattern of adaptation to individual differences is one in which the prospective future role of a student is determined, and depending upon this role, he is provided with an appropriate curriculum. When this system is in operation, students are channelled into different courses such as academic courses, vocational courses, or business courses; vocationally-oriented students get one kind of mathematics and academically-oriented students get a different kind of mathematics. Adapting to individual differences by this pattern assumes that an educational system has provision for optional education objectives, but within each option the instructional program is relatively fixed.

A third pattern of adaptation to individual differences varies instructional treatments; different students are taught by different instructional procedures, and the sequence of educational goals is not necessarily common to all students. This pattern can be implemented in different ways. At one extreme, a school can provide a main fixed instructional sequence, and students are branched off from this track for remedial work; when the remedial work is successfully completed, the student is put back into the general track. At the other extreme, there is seemingly the more ideal situation. A school carries out an instructional program which begins by providing detailed diagnosis of the student's learning habits and attitudes, achievements, skills, cognitive style, etc. On the basis of this analysis of the student's characteristics, a prescription is made for a course of instruction specifically tailored to him. Conceivably, in this procedure, students learn in different ways--some by their own discovery, some by more structured methods, some by reading, and some by listening to lectures.

In light of the current experimentation in schools on procedures for adapting to individual differences, it seems likely that in the near future, patterns falling between these two latter extremes will be developed and adopted

by many schools. The quality of the various systems developed will depend upon the answers to many questions of research and practical implementation. The entire difficult question of the interaction between the characteristics of a student at a particular point in his learning and appropriate methods of instruction is raised for intensive study. Proof will have to be forthcoming that the instructional methods devised for adapting to individual student differences result in significantly greater attainment of educational goals than less intricate classroom practices or classroom practices where the average best method is employed. Such proof will be accumulated (rather than proved by one crucial experiment) from careful and controlled evaluation of imaginative attacks on the problem.

Requirements for Individualization

It is evident that much of the motion in current educational reform is oriented toward advances in individualizing education. The important question of the moment is whether this activity and the new developments involved will accomplish this objective or whether they will be caught in the inertia of practicality and diffuseness which has stifled similar attempts in the past. Both operating and research experience indicate that certain fundamental requirements for individualization will have to be met if progress along these lines is to be realized. These requirements seem to be the following:³

1. The conventional boundaries of grade levels and arbitrary time units for subject matter coverage need to be redesigned to permit each student to work at his actual level of accomplishment in each subject matter area and to permit him to move ahead in each subject as soon as he masters the prerequisites for the next level of advancement.
2. Well-defined sequences of progressive, behaviorally defined objectives in various subject areas need to be established as guidelines for setting up a student's program of study. The student's achievement is defined by his position along this progression of advancement.

³Discussions with Professor Glen Heathers of New York University have been quite helpful here.

3. A student's progress through a curriculum sequence must be monitored by adequate methods and instruments for evaluating his abilities and accomplishments so that a teaching program can be adapted to his requirements and readinesses.

4. Students must be taught and must be provided with appropriate instructional materials so that they acquire increasing competence in self-directed, self-paced learning. In order to accomplish this, the teacher must provide the student with standards of performance so that he can evaluate his own attainment. Primarily, teacher-directed learning must be replaced by teacher-guided, learner-directed accomplishment in order for the goals of individualized education to be achieved.

5. Special professional training must be provided to school personnel so that they can accomplish the evaluation and diagnosis of student performance that is required in order to organize instruction for individualized programs. Teachers must become increasingly competent in the theory and practices of educational diagnosis, evaluation, and guidance. Currently, the teacher is trained in the total class management of learning. In contrast, teachers must now learn how to adapt instruction to subgroups of students and to the individual student.

6. The individualization of instruction requires that the teacher attend to and utilize detailed information about each student in order to design appropriate instructional programs. To assist the teacher in processing this information, it seems likely that schools will take advantage of the unique benefits of automation, and automated data-processing. These systems need to be devised in such a way that school system personnel can use them comfortably and wisely.

At the present time, it seems possible to develop educational methods that are more sensitive to individual differences than our procedures have been in the past. Educational systems for accomplishing this will no doubt take many forms and have many nuances as they are developed by our educational leaders. In the main, however, it is well to remember that individualization requires the fine honing of instructional procedures so that a student seeks and achieves mastery proceeding along a path, to a large extent, dictated by

his own requirements. As a result of a balance between teacher guidance and the student's own self-appraisal, he can follow the path, or blaze the trail, which is neither too difficult nor too easy for him. The teacher in this process will play the significant role of helping the student discover how he learns best; the teacher will need to learn from the learner how to teach, and teach the learner how to learn.